Smoking During Pregnancy

The Health and Economic Burden of Smoking During Pregnancy

- In 2000, there were 531,285 births in the state of California.[1]
- Cigarette smoking has been identified as a significant and modifiable risk factor for both low birth weight[2,3] and pre-term delivery[2]. Maternal smoking during pregnancy has also been implicated in sudden infant death syndrome.[4]
- Nationally, maternal smoking has been shown to increase the relative risk of admission of newborns to a Neonatal Intensive Care Unit (NICU) by almost 20%.[5]
- Women who stop smoking during pregnancy, particularly prior to the third trimester, have been shown to give birth to heavier infants than those who continue to smoke throughout pregnancy, underscoring the importance of smoking cessation.[3,6]
- Significant economic costs are associated with the adverse health effects of maternal smoking. Smoking has been estimated to add over $700 in neonatal costs for each live birth from a smoking mother (1996 dollars).[5]
- Each year in the U.S., smoking attributable neonatal costs are estimated to be $367 million, varying from less than $1 million in smaller states, to over $35 million in California (1996 dollars).[5]

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- In 2000, 9.8% of pregnant women in California smoked cigarettes during their first and/or third trimester.

Smoking During Pregnancy by Maternal Demographic Characteristics*

- In 2000, the prevalence of smoking during pregnancy ("smoked any cigarettes during the first and/or third trimester") declined with increasing age. Smoking prevalence was significantly higher in the 15-24 age group (12.8%) than in the 35 and older age group (7.9%) (see table).
- Smoking during pregnancy was highest among African American women, followed by Non-Hispanic White, Hispanic, and Asian or Pacific Islander women (see table).

Smoking During Pregnancy in California, 2000

Demographic Characteristics	Sample Size	Smoke During Pregnancy (%)	Margin of Error
Overall	3,518	9.8%	±1.0%
Age			
15-24	1,268	12.8%	±1.9%
25-34	1,667	8.3%	±1.3%
35 or older	583	7.9%	±2.2%
Race/Ethnicity			
Non-Hispanic White	1,183	15.3%	±2.1%
African American	515	17.1%	±3.6%
Hispanic	1,380	5.1%	±1.2%
Asian or Pacific Islander	339	3.6%	±1.9%
Income as a percent of 1999 Federal Poverty Level (FPL)[§]			
0-100%	1,177	13.6%	±2.0%
101-200%	649	10.6%	±2.4%
201-300%	341	12.9%	±3.6%
301-400%	267	5.6%	±2.9%
401% or more	706	4.8%	±1.6%
Insurance Coverage			
Medi-Cal	1,381	12.8%	±1.8%
Private Plan/Other	1,802	7.1%	±1.2%
Uninsured	139	11.3%	±5.2%
Prenatal Care Initiation			
During 1st Trimester	2,471	8.5%	±1.1%
During 2nd or 3rd Trimesters	711	15.3%	±2.7%

[§]In 2000, women were asked to estimate their household income during the year prior to the birth of their child, approximating household income during the duration of the pregnancy. Maternal household income was calculated as a percentage of the 1999 Federal Poverty Level. For a one-person household in 1999, the poverty level was $8,240 per year. Each additional household member increases the poverty level by $2,820 per year. The presence of the fetus was accounted for by increasing the household size for each respondent by 1.

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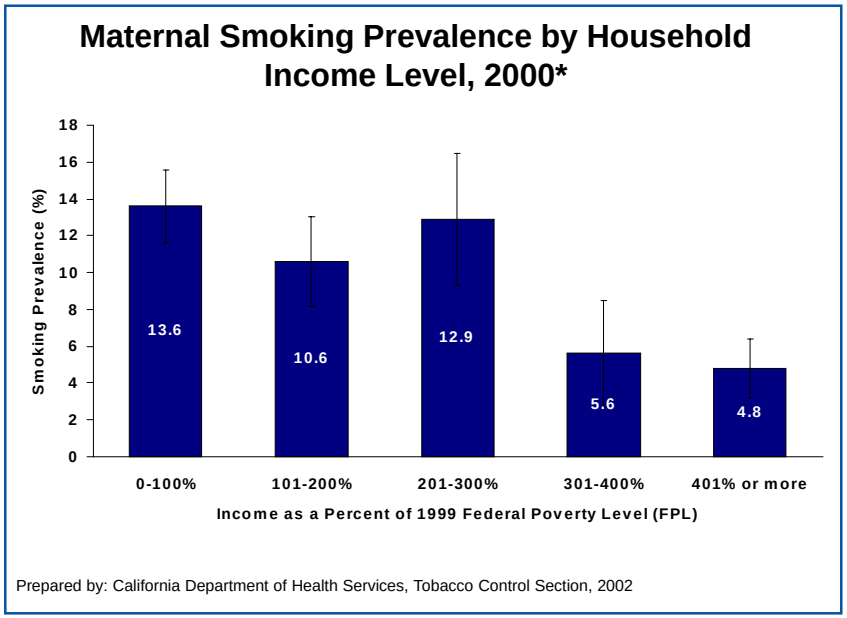
Smoking prevalence declined with increasing levels of educational attainment and income:

- Pregnant women who have less than a high school degree were 2.5 times more likely and women with a high school degree/GED were 2.4 times more likely to have smoked during the first and/or third trimester than were women with a college degree or more.[8]
- Women with an income between 0-100% of the 1999 Federal Poverty Level (FPL) had 2.8 times the smoking rate of women with an income over 400% of the 1999 FPL (see figure).

Smoking During Pregnancy and Prenatal Care*

- Women who initiated prenatal care during their second or third trimester had significantly higher smoking prevalence rates than women who initiated prenatal care during their first trimester (15.3% and 8.5%, respectively).
- Smoking during pregnancy differs by insurance type. Pregnant women who had Medi-Cal insurance during their pregnancy had the highest smoking prevalence rates (12.8%), followed by uninsured women (11.3%), and women with private plan/other insurance (7.1%).



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About the survey

Information was obtained from the 2000 Maternal and Infant Health Assessment survey (MIHA)[7], a statewide, representative survey of women delivering live births in California. The MIHA is a collaborative project of *the Maternal and Child Health Branch, California Department of Health Services*, and the *University of California, San Francisco*. The MIHA is an annual survey that consists of a self-administered questionnaire that is mailed to a stratified random sample of approximately 5,000 women delivering live births in California during February through May of each year, as identified through birth certificates (approximately 3,500 women complete the survey annually). The survey sample was stratified by 5 California regions and 2 levels of maternal education (less than high school education, yes/no) and maternal race (African American, yes/no). African American women were oversampled in the survey to increase the number of African American respondents. Questionnaires are mailed 10-14 weeks postpartum. The average response rate of the MIHA is approximately 70.0%. Data have been weighted to the population of eligible pregnant California women in 2000. The population eligible for inclusion in the survey sample included mothers of infants born February to May, excluding mothers under age 15, maternal deaths, multiple births >3 (i.e. quadruplets plus), birth certificates with missing addresses or names, and non-California residents. Smoking during pregnancy was defined as any self-reported maternal smoking during the first and/or third trimesters of pregnancy.

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8. Maternal and Infant Health Assessment Survey (MIHA), 2000. Logistic regression analysis. Dependent measure: smoking prevalence. Independent measures: maternal education (3 levels), age (2 levels), and race (4 levels). Education analysis was restricted to women aged 25 and older.

Acknowledgments

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*The Maternal and Infant Health Assessment (MIHA) is a self-administered, mailed survey of a statewide, representative survey of women delivering live births in California. The prevalence of smoking during pregnancy is based on the MIHA because smoking information is not collected on California birth certificates. [7]

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